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ABSTRACT

Results of a pilot follow-up study conducted on Spanish dominant students in transition from bilingual programs to English only instructional settings was reported. The sample group was predominantly Mexican American and native Mexican students. Three types of data were collected: individual scores on Comprehensive Test of Basic Skills (CTBS), teacher ratings of performance in five subject areas, and scores on an observation instrument measuring levels of classroom participation. The CTBS scores in vocabulary and comprehension served as measures of English reading proficiency. Classroom participation was considered an important indicator of post-transition success. Data were subjected to a series of regression analyses designed to identify predictors of post-transition performance. Tables summarized the results of statistical analyses. These results should not be generalized unless different Hispanic groups served by bilingual education programs are represented. Recommendations for extension of this research included refining instrumentation to produce a balanced assessment of a variety of language proficiencies. Better conceptualization and specification of the instruments to be employed are required. It is critical to specify criteria for success following transition from a bilingual program. (DWH)

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BILINGUAL EVALUATION PROGRAM

WORK UNIT 2

Bilingual Prediction Study

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FINAL TECHNICAL REPORT OF THE 1976-77 PILOT AND FOLLOW-UP STUDY

TM 820 104

CENTER FOR THE STUDY OF EVALUATION
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THE BILINGUAL PREDICTION STUDY: FINAL TECHNICAL REPORT OF THE 1976-77 PILOT AND FOLLOW-UP STUDY

The Bilingual Prediction Study is an NIE-funded research project that forms one component of the Bilingual Evaluation Program at the Center for the Study of Evaluation (CSE). The purpose of the Prediction Study is to develop a research base for materials that predict with reasonable accuracy the ability of a non-English-dominant child to profit from English language instruction. The products of the study are intended to be made available to school districts which, to comply with the judicial mandate issued in the Lau v Nichols Supreme Court decision, must provide evidence to show that students who have been enrolled in bilingual programs are ready to make the transition to programs in which English is the sole language of instruction. The study focuses on students for whom Spanish is the native language; these students comprise the largest minority language group presently served by public schools in the U.S.

In 1976, CSE initiated the first phase of a two-year pilot study of Spanish dominant third-graders in transition from bilingual programs to English only instructional settings. In the spring of 1976, background, attitudinal, and language proficiency measures were obtained on a sample of 115 students in five schools in the greater Los Angeles metropolitan area. Data from this first year's study were reported and analyzed in an earlier document.[1] The present report incorporates results of a follow-up study conducted with the same sample in the spring of 1977.

The 1977 Follow-Up Study

Of the 115 third-grade students who were tested in the spring of 1976, 88 were located for a follow-up study in the spring of 1977. These students were by then enrolled in the fourth grade and were receiving part, if not all, of their instruction in English.

Three types of data were collected on these students: individual pupil scores on the state-mandated Comprehensive Test of Basic Skills (CTBS), teacher ratings of student performance in five subject areas (English reading, English language arts, mathematics, social studies, and science), and scores on an observation instrument measuring levels of classroom participation. These data were seen to provide separate measures of success following transition to English language instruction.

English Reading Proficiency

The individual pupil scores on two sections of the CTBS (vocabulary and comprehension) were obtained from school records and served as measures of fourth-grade English reading proficiency. Table 1 provides average raw scores and standard deviations on the CTBS for each of the five target schools and for the sample as a whole; for comparison purposes, parallel data from the 1976 sample are given as well. In three of the five schools and for the sample as a whole, mean scores were slightly higher for the 1977 follow-up. The small size of the gains may be attributable in part to more comprehensive inclusion of students in the CTBS testing program. With the 1976 testing, it was demonstrated that many students were systematically excluded on the basis of their lack of proficiency in English.

Teacher Ratings of Pupil Performance

Classroom teachers were asked to rate individual pupil performance in

Table 1. Student scores on CTBS measure of English reading proficiency: means and standard deviations for third and fourth grade, by school and total sample.

	School					Total Sample
	A	B	C	D	E	
English Reading Proficiency (CTBS)*						
Third grade (Spring 76)						
Mean	24.00	27.27	31.00	36.43	33.94	31.01
(Standard deviation)	(13.59)	(18.65)	(14.05)	(14.95)	(12.26)	(15.12)
N	n=10	n=17	n=17	n=14	n=17	n=75
Fourth grade (Spring 77)						
Mean	40.67	35.93	29.50	42.86	31.83	35.66
(Standard deviation)	(26.01)	(23.90)	(18.54)	(19.75)	(15.38)	(20.08)
N	n=6	n=14	n=20	n=22	n=18	n=80

*Possible range of raw scores (lowest to highest): zero to 85

five subject areas: English reading, English language arts, mathematics, social studies, and science. For each area, a rating was assigned on a scale ranging from one ("far below average for grade-level in this school") to five ("far above average for grade-level in this school"). In addition, teachers were asked to indicate the usual language in which the child received instruction in each of the five areas. Where the language of instruction was Spanish-only, the subject ratings were re-coded as one's.

The use of a normative scale and the recoding of ratings according to language of instruction were intended to provide an indication of a child's success in terms of what is typically expected of a fourth-grade student in the particular school. In this instance, post-transition success was defined as average or better-than-average grade-level performance of a fourth-grade student receiving instruction in English.

Table 2 provides the means and standard deviations of these performance scores by school and for the sample as a whole. For the total sample, mean teacher ratings in all of the five subject areas were in the "below average" range. Teacher ratings were generally lower for performance in reading and language arts than for performance in the other subject matter areas, which normally tend to rely less on language facility for success (e.g., mathematics, science). Nonetheless, in none of the schools were mean ratings higher than the "below average" range for any subject area.

Levels of Participation

In addition to reading proficiency and performance in the five subject areas, classroom participation was identified as an important indicator of post-transition success. To measure classroom participation, an observation instrument was used. This instrument was designed to allow trained observers to record pupil responses in teacher-led, small-group instructional activities.

Table 2. Teachers' ratings of fourth grade student performance in five subject areas: means and standard deviations by school and total sample.

	SCHOOL					
	A	B	C	D	E	Total Sample
Teacher rating* in:						
Reading						
Mean	1.14	1.93	2.32	2.50	1.95	2.118
(Standard deviation)	(.38)	(1.21)	(1.11)	(1.18)	(1.36)	(1.209)
N	n=7	n=14	n=19	n=24	n=21	n=85
Language Arts						
Mean	1.14	1.71	2.37	2.33	2.19	2.106
(Standard deviation)	(.38)	(1.27)	(1.12)	(1.17)	(1.03)	(1.134)
N	n=7	n=14	n=19	n=24	n=21	n=85
Mathematics						
Mean	1.14	2.43	2.68	1.88	2.52	2.247
(Standard deviation)	(.38)	(1.16)	(1.25)	(1.26)	(1.08)	(1.214)
N	n=7	n=14	n=19	n=24	n=21	n=85
Social Studies						
Mean	1.29	2.50	2.37	2.00	2.29	2.185
(Standard deviation)	(.76)	(1.09)	(1.12)	(1.30)	(1.06)	(1.141)
N	n=7	n=14	n=19	n=20	n=21	n=81
Science						
Mean	1.29	2.50	2.58	2.00	2.43	2.272
(Standard deviation)	(.76)	(1.09)	(1.07)	(1.30)	(1.03)	(1.140)
N	n=7	n=14	n=19	n=20	n=21	n=81

* Teachers were asked to rate individual pupil performance according to the following scale: 1 -far below average (for grade level in this school); 2 - below average; 3 - average; 4 -above average; 5- far above average. Ratings based on performance with English as the language of instruction.

In using this instrument, observers differentiated both type (voluntary or involuntary) and quality (correct-appropriate or incorrect-inappropriate) of response. A student's final score was calculated as a function of the number of response opportunities available during the observed session. Response opportunities, in turn, were calculated as a function of the time of the session, the total number of pupils in the group, and the total number of times the teacher solicited a response.[3,4] A copy of the instrument and procedures for administration are provided in the Appendix.

Seventy students from the original sample were observed in teacher-led, small-group instructional activities conducted in English. Most of the activities were reading or math lessons. In addition, a random sample of English-dominant students was similarly observed in the same classrooms, and, to the extent possible, in the same activities. Table 3 provides mean participation scores for the two samples.

For the sample as a whole, the mean score of the original group was slightly higher than that of the native English-speaking comparison group. From school to school, this difference varied, such that the comparison groups in two school (C and E) had higher mean scores than the original groups sampled whereas the reverse held true in three of the schools (A, B and D). Nonetheless, a T-test performed on the combined groups across schools -- original sample and comparison sample -- revealed no significant differences.

Relationship between pre-and post-transition measures

Table 5 provides the intercorrelation matrix for the three types of post-transition measures: CTBS scores (SCTBS), teacher ratings (NRATE 1-5), and scores on the measure of classroom participation (PLEVEL). Significant correlations were obtained between SCTBS and each of the teacher ratings ($p < .001$). PLEVEL failed to correlate significantly with any of the other post-transition measures.

Table 3. Students' level of participation in teacher-led, small-group instruction; comparison of means and standard deviations of original sample and randomly-selected English-dominant sample, by school and total sample.

	SCHOOL					
	A	B	C	D	E	Total Sample
Participation Level (PLEVEL)*						
Original sample						
Mean	2.336	0.505	0.929	1.030	0.599	0.947
(Standard deviation)	(1.768)	(0.416)	(0.803)	(0.553)	(0.430)	(0.872)
N	n=6	n=11	n=18	n=21	n=14	n=70
Comparison sample						
Mean	0.910	0.403	1.378	0.826	0.603	0.857
(Standard deviation)	(1.190)	(0.353)	(0.506)	(0.718)	(0.542)	(0.714)
N	n=6	n=11	n=16	n=20	n=12	n=65

*PLEVEL scores were calculated as observed responses (RESPSCR) divided by opportunities to respond (RESPOPP). RESPSCR, in turn, was calculated as a function of the quality of response, i.e., voluntary, non-voluntary, appropriate or correct, inappropriate or incorrect. RESPOPP was calculated as a function of time, size of the group, and total number of response opportunities.

Table 4. Explanation of variable names

ZREAD1	Composite of standardized scores on three measures of English reading proficiency (SOBAR, ECE, and CTBS)
SOBER	Spanish reading proficiency
ENRDNG	Months of English reading instruction
SPRDNG	Months of Spanish reading instruction
TIMEUS	Time spent in the U.S.
TESTGA	English listening comprehension
PRUEBA	Spanish listening comprehension
BSMENG	English verbal production (speaking)
BSMSP	Spanish verbal production
SCHLATTB	Attitudes toward school
TCHRATE	Pre-transition teacher rating (ability to profit from English language instruction)
ENGUSE	Extent of English usage
SEX	Sex of student
AGE	Age of student
TLANGATT	Attitudes toward language
PLEVEL	Level of classroom participation
SCTBS	Fourth-grade CTBS score (English reading proficiency)
NRATE1	Teacher rating of performance in fourth-grade English reading
NRATE2	Teacher rating of performance in fourth-grade Language Arts
NRATE3	Teacher rating of performance in fourth-grade Mathematics
NRATE4	Teacher rating of performance in fourth-grade Social Studies
NRATE5	Teacher rating of performance in fourth-grade Science
NRATE6	Composite teacher rating of fourth-grade performance across the five subject matter areas

Table 5. Pearson r correlation coefficients: fourth-grade performance measures

	PLEVEL	SCTBS	NRATE1	NRATE2	NRATE3	NRATE4	NRATE5
PLEVEL	------						
SCTBS	.285 (n=65)	-----					
NRATE1	.138 (n=68)	.672* (n=79)	------				
NRATE2	.107 (n=68)	.572* (n=79)	.807* (n=85)	-------			
NRATE3	-.017 (n=68)	.488* (n=79)	.556* (n=85)	.595* (n=85)	------		
NRATE4	.047 (n=65)	.572* (n=76)	.748* (n=81)	.701* (n=81)	.826* (n=81)	-----	
NRATE5	.034 (n=65)	.521* (n=76)	.652* (n=81)	.633* (n=81)	.817* (n=81)	.950* (n=81)	-------

$p < .001$

Pearson correlation coefficients were also calculated for the pre-transition measures of English reading proficiency (SOBAR, ECE, CTBS, and the standardized composite ZREAD1) and the three types of post-transition measures (PLEVEL, SCTBS, and Teacher ratings). These coefficients are provided in Table 6. Only PLEVEL failed to correlate significantly with the third-grade measures of English reading proficiency; all of the other post-transition measures were significantly correlated ($p < .001$) with pre-transition English reading proficiency.

The weakness of the relationship between PLEVEL scores and pre-transition English reading proficiency suggests that, unlike the other two post-transition measures (teacher ratings and NCTBS), PLEVEL offers a different perspective on post-transition performance. The implication is that, while pre-transition English reading proficiency may provide an indication of certain types of post-transition performance, it does not appear to be a strong indicator of post-transition ability to participate in class or to become integrated into the instructional process.

Table 6. Pearson r correlation coefficients: follow-up measures of fourth-grade performance with third-grade measures of English reading proficiency

	Third-grade English reading proficiency			
	SOBAR	ECE	CTBS	ZREAD1
Fourth-grade measures				
PLEVEL	.259 (n=60)	.209 (n=58)	.107 (n=50)	.119 (n=44)
SCTBS	.736* (n=70)	.764* (n=69)	.777* (n=60)	.812* (n=52)
Teacher Rating - Reading	.514* (n=72)	.555* (n=71)	.617* (n=62)	.652* (n=54)
Teacher Rating - Lang. Arts	.467* (n=69)	.499* (n=68)	.688* (n=62)	.652* (n=54)
Teacher Rating - Math	.380* (n=72)	.488* (n=71)	.496* (n=62)	.449* (n=54)
Teacher Rating - S. Studies	.402* (n=70)	.516* (n=69)	.460* (n=61)	.412* (n=54)
Teacher Rating - Science	.370* (n=70)	.489* (n=69)	.429* (n=61)	.345* (n-54)

* $p < .001$

Identifying Predictors of Post-Transition Performance

The problem of incomplete data sets, as well as shrinkage of the sample over time resulted in extremely small n's, particularily for use in regression analyses with multiple variables. Nonetheless, for instructive and developmental purposes, the data were subjected to a series of regression analyses designed to identify predictors of post-transition performance. Each of the three post-transition performance measures, SCTBS (English reading proficiency), NRATE1-5 (Teacher ratings) and PLEVEL (level of classroom participation) served as the dependent or criterion variable in a separate analysis. (The five teacher ratings, NRATE 1-5, were combined into one score, NRATE6, a measure of over-all post-transition performance as rated by classroom teachers.) Independent variables consisted of pre-transition measures of Spanish and English language proficiencies (reading, speaking, listening), as well as other background, attitudinal, and language usage measures.

An underlying concern of this study is the role of pre-transition English reading proficiency in post-transition performance. In other words, how does prior ability to read in English influence children's performance once they make a transition from bilingual classrooms to English only instructional settings? To examine this issue, regression analyses were run both with and without ZREAD1, the composite measure of third grade English reading proficiency, as one of the independent, or predictor, variables.

Prediction of English reading proficiency (SCTBS)

Two step-wise multivariate regression analyses using SCTBS as the dependent measure were conducted. The first analysis included ZREAD1 as one of the independent variables. Results of this analysis are summarized in Table 7. In all, fifteen independent variables were introduced as possible predictors

Table 7. Summary table of step-wise multivariate regression analysis with SCTBS as the dependent measure and ZREAD1 as one of the independent measures.

(n=32)	Multiple R	R^2	R^2Change	Simple R	B*	BETA**
SCTBS with:						
TCHRATE	0.77151	0.59522	0.59522	0.77151	6.286716	0.58474
ZREAD1	0.86280	0.74442	0.14920	0.76846	7.807047	1.01690
BSMSP	0.87617	0.76768	0.02325	0.37316	5.153473	0.16642
SPRDNG	0.88372	0.78096	0.01328	-0.25558	1.105927	0.37443
TIMEUS	0.80240	0.79638	0.01543	0.30004	-0.8545954D-01	-0.15159
SCHLATTB	0.89941	0.80894	0.01255	0.09497	-0.3681846	-0.34781
SOBER	0.90545	0.81984	0.01090	0.62710	-1.308161	-0.39297
TESTGA	0.91320	0.83393	0.01408	0.27590	-0.995065C	-0.21438
BSMENG	0.91880	0.84420	0.01028	0.35227	-5.233490	-0.21574
PRUEBA	0.92045	0.84723	0.00303	0.37061	1.070176	0.17186
ENGUSE	0.92387	0.85354	0.00631	0.22683	2.506527	0.18693
TLANGATT	0.92499	0.85561	0.00207	-0.25710	0.6407497D-01	0.06290
SEX	0.92554	0.85662	0.00100	0.30141	3.263690	0.8113
AGE	0.92640	0.85822	0.00161	0.06548	0.2703412	0.07566
(CONSTANT)					-10.08952	

*B= unstandardized beta weight or regression coefficient
**BETA= Standardized beta weight or regression coefficient

of SCTBS. Fourteen of these variables were able to account for almost 86% of the variance in the dependent measure of fourth-grade English reading proficiency. Of these fourteen variables, TCHRATE and ZREAD1 accounted for over 74% of the variance in SCTBS and produced significant regression coefficients ($p. < .01$) in the final equation.

When ZREAD1 was dropped as a predictor variable, the strength of explanation of the regression equation shrunk to 76% (Table 8). Some of the explanatory power of ZREAD1 was replaced by TIMEUS and SOBER but neither of these measures resulted in statistically significant regression coefficients in the final equation.

Prediction of Teacher Ratings (NRATE6)

Table 9 gives a summary of the regression analysis in which ZREAD1 was included as an independent variable. Fifteen variables were introduced; of these 14 were included in the final equation which accounted for almost 75% of the variance in NRATE6. TIMEUS was entered at the first step of the analysis and, with no other variables in the equation, accounted for approximately 40% of the variance in NRATE6. As other variables were entered, however, the unique explanatory power of TIMEUS diminished. No single variables, in fact, produced significant ($p. < .01$) regression coefficients in the final analysis, although of the independent variables, five (TIMEUS, BSMSP, SPRDNG, TLANGATT, and BSMENG) explained in combination almost 65% of the variance in NRATE6.

Without ZREAD1, the combined prediction power of the remaining fourteen variables declines to 69%. TIMEUS, however gains significance ($p. < .01$) in the final equation. A summary of this analysis is given in Table 10.

Prediction of Classroom Participation (PLEVEL)

Similar regression analyses were run with PLEVEL as the dependent variable.

Table 8. Summary table of step-wise multivariate regression analysis with SCTBS as the dependent measure and excluding ZREAD1 as an independent variable.

(n=32)	Multiple R	R^2	R^2Change	Simple R	B*	BETA**
SCTBS with:						
TCHRATE	0.77151	0.59522	0.59522	0.77151	5.899155	0.54870
TIMEUS	0.80262	0.64420	0.04898	0.30004	0.1872042	0.33208
SOBER	0.84504	0.71410	0.06990	0.62710	1.045993	0.31421
BSMSP	0.85708	0.73459	0.02049	0.37316	5.393341	0.17416
SPRDNG	0.86415	0.74675	0.01215	-0.25558	0.6914188	0.23409
SEX	0.86616	0.75023	0.00348	0.30141	0.8444162	0.02099
ENGUSE	0.86880	0.75481	0.00458	0.22683	1.577091	0.11761
SCHLATTB	0.87096	0.75857	0.00376	0.09497	-0.1601412	-0.15128
ENGRDNG	0.87158	0.75965	0.00109	0.42599	0.2178837	0.09064
TESTGA	0.87215	0.76065	0.00099	0.27590	-0.5626515	-0.12122
AGE	0.87395	0.76379	0.00314	0.06548	-0.4089368	-0.11445
BSMENG	0.87448	0.76472	0.00093	0.35227	0.8814283	0.03634
PRUEBA	0.87462	0.76495	0.00023	0.37061	0.1794514	0.02882
(CONSTANT)					3.020476	

*B= unstandardized beta weight or regression coefficient
**BETA= standardized beta weight or regression coefficient

Table 9. Summary table of step-wise multivariate regression analysis with NRATE6 as the dependent measure and ZREAD1 as one of the independent measures

(n=33)	Multiple R	R^2	R^2Change	Simple R	B*	BETA**
NRATE6 with:						
TIMEUS	0.63386	0.40178	0.40178	0.63386	0.5790362D-01	0.41220
BSMSP	0.69104	0.47753	0.07575	0.19404	2.107885	0.27468
SPRDNG	0.74494	0.55494	0.07740	-0.55904	-0.2592903	-0.35278
TLANGATT	0.76716	0.58854	0.03360	-0.34364	-0.6082989D-01	-0.24943
BSMENG	0.80004	0.64006	0.05152	0.22838	-2.653789	-0.43599
ENGRDNG	0.80956	0.65540	0.01534	0.41065	-0.2008929	-0.33338
ZREAD1	0.82203	0.67573	0.02033	0.47274	1.457863	0.79239
AGE	0.83411	0.69574	0.02001	0.13949	0.3129799	0.34864
SOBER	0.85540	0.73171	0.03597	0.02820	-0.3837140	-0.49389
TESTGA	0.85896	0.73781	0.00610	0.26932	0.1606043	0.13790
ENGUSE	0.86046	0.74038	0.00258	0.42459	-0.2803533	-0.08321
PRUEBA	0.86159	0.74234	0.00196	0.13666	-0.7877970D-01	-0.05078
SEX	0.86269	0.74423	0.00189	-0.01624	0.8440225	0.08476
TCHRATE	0.86379	0.74613	0.00190	0.20772	-0.2294420	-0.08514
(CONSTANT)					-3.836756	

*B= unstandardized beta weight or regression coefficient
**BETA= standardized beta weight or regression coefficient

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Table 10. Summary table of step-wise multivariate regression analysis with NRATE6 as the dependent measure and excluding ZREAD1 as one of the independent measures.

(n=33)	Multiple R	R^2	R^2Change	Simple R	B*	BETA**
TIMEUS	0.63386	0.40178	0.40178	0.63386	0.1087139	0.77390
BSMSP	0.69104	0.47753	0.07575	0.19404	2.140078	0.27887
SPRDNG	0.74494	0.55494	0.07740	-0.55904	-0.3388016	-0.46096
TLANGATT	0.76716	0.58854	0.03360	-0.34364	-0.7211258D-01	-0.29569
BSMENG	0.80004	0.64006	0.05152	0.22838	-1.498882	-0.24625
ENGRDNG	0.80956	0.65540	0.01534	0.41065	-0.1644591	-0.27292
AGE	0.81645	0.66660	0.01120	0.13949	0.1917530	0.21360
TESTGA	0.82162	0.67505	0.00846	0.26932	0.2512888	0.21576
PRUEBA	0.82412	0.67918	0.00413	0.13666	-0.2519961	-0.16244
ENGUSE	0.82676	0.68354	0.00436	0.42459	-0.4686993	-0.13763
SCHLATTB	0.83114	0.69080	0.00726	-0.18221	0.4054678D-01	0.15292
TCHRATE	0.83189	0.69205	0.00125	0.20772	-0.2873975	-0.10665
SOBER	0.83244	0.69296	0.00092	0.02820	0.4625379D-01	0.05953
SEX	0.83297	0.69384	0.00087	-0.01624	0.4542228	0.04561
(CONSTANT)					-2.1870460	

*B= Unstandardized beta weight or regression coefficient
**BETA= Standardized beta weight or regression coefficient

neither analysis, with or without ZREAD1 as one of the independent variables, yielded statistically significant results.

Discussion

Central to the identification of post-transition performance is the issue of defining appropriate measures for such performance. Three separate measures were employed in this pilot study: fourth-grade scores on a standardized English reading test (SCTBS), assessments by classroom teachers for five subject areas (NRATE 1-5), and measures of classroom participation obtained through a project-developed instrument (PLEVEL). That each of these measures assesses a different dimension of post-transition performance is not merely apparent on an intuitive level but suggested by a simple inter-correlation matrix (Table 5).

Data analyses using a multivariate regression model yielded some preliminary information about those pre-transition factors that best predict post-transition performance. This information must be interpreted with extreme caution, due to the size of the sample and to the great number and variety of variables employed in the analyses. With extremely small n's and an over abundance of predictor variables, the size of the R^2's is artificially large. One would anticipate enormous shrinkage of R^2, were the sample size enlarged and/or the number of separate predictors reduced.

Given these considerations, the exact role of English reading proficiency in the successful transition of students from bilingual to monolingual English classrooms was difficult to assess. Significant correlations between pre-transition measures of English reading proficiency and two of the post-transition performance measures suggest that certain aspects of successful transition may be related to prior ability to read English; specifically, these aspects are reflected in teacher assessments of performance across the major subject areas

(as measured by NRATE1-5) and English reading proficiency (as measured by SCTBS). The magnitude of the relationship between these measures and pre-transition English reading ability is, however, unclear from the present analysis. Moreover, it appears that English reading ability has little relationship to post-transition performance as measured by PLEVEL, or classroom participation.

Conclusions and Recommendations

It is important to emphasize the exploratory nature of this pilot study. Working with a small (n=115) sample facilitated certain developmental aspects of the research, particularly those related to the follow-up phase and its instrumentation. At the same time, however, the small sample size precluded the possibility of obtaining meaningful results from use of the multivariate regression model. Nonetheless, this pilot study has yielded valuable information for the design and implementation of a refined and enlarged study.

Of paramount concern in the extension of this research is a sample of adequate proportions. In addition, if the results are to be generalized to a broader population, the sample must be more representative of the different Hispanic groups served by bilingual education programs. The sample for the pilot study was predominantly comprised of students of Mexican-American and native Mexican origin who resided in the Los Angeles metropolitan area. At the very least, a comparable sample drawn from an East Coast population of predominantly Puerto Rican and Dominican origin should be included.

Other considerations for the extension of this research include the following:

1. Instrumentation must be refined to produce a balanced assessment of a variety of language proficiencies. The measures of English reading proficiency that were employed in the pilot study (particularly the CTBS measure) over-tested some areas, such as sight vocabulary, at the expense of other areas, such as

syntax. Moreover, the use of standardized assessment instruments that have not been normed for a comparable non-English-dominant population are generally problematic for research of this nature.

2. To ensure meaningful results from use of the regression model, the number of separate variables must be reducible. This requires better conceptualization, as well as specification of the instruments to be employed.

3. In order to adequately identify measures of post-transition performance, it is critical to specify criteria for success following transition from a bilingual program. In other words, what factors differentiate successful and non-successful students? Further attention must be devoted to this issue. A refined research design might include a sub-sample of students for whom bilingual instruction has been terminated, regardless of the ability of those students to make a transition to monolingual English instruction. Appropriate to the research would be analyses of the factors that best differentiate between the most successful and the least successful students in this sub-sample; these analyses would be undertaken with a variety of criteria for success. Possibilities for a composite success index might be explored as well.

FOOTNOTES

1. CSE Report No. 109 (1978).

2. In an earlier paper, some 1977 CTBS Scores were incorrectly computed and reported.

3. Calculations of levels of participation was performed as follows:

   *Response score (RESPSCR) = sum of individual child's responses, as a function of the type of response where.

   0 = (0) Teacher called on child to respond involuntarily and child made no attempt to respond

   1 = (v) Child volunteered but, when called upon, made no attempt to respond

   2 = (~~0~~) Teacher called on child to respond involuntarily. The child attempted to respond but gave an inappropriate or incorrect response.

   3 = (~~V~~) Child volunteered. When called upon, child attempted to respond but gave inappropriate or incorrect response.

   4 = (~~C~~) Teacher called on child to respond involuntarily. The child gave an appropriate or correct response.

   5 = (~~v~~) Child volunteered and, when called upon gave an appropriate or correct response.

   *Opportunity to respond (RESPOPP) = (number of responses/minutes in the lesson/number of children in the group) x 100

   *Participation score (PLEVEL) = RESPSCR/RESPOPP

4. An inter-observer reliability coefficient of .728 was calculated from observations made in a special session prior to the actual data collection activities.

APPENDIX

OBSERVING A STRUCTURED, SMALL GROUP ACTIVITY

Specifications for the activity.

1. Size of the group should be six to ten students.
2. The activity should be teacher-led.
3. The students should maintain their relative seating arrangement throughout the activity.
4. The activity should be conducted in English.

Procedures.

1. As soon as the children are seated, make a circle of about 1½ inches in diameter for each child, such that the location of the circles on your observation sheet corresponds to the relative location of the children being observed. Write the name of each of your target children at the top of his/her circle.

2. Record the time the lesson formally begins.

3. Each time the teacher calls upon a child to respond, mark a small "v" in the child's circle if he/she has volunteered the answer OR a small "o" in the child's circle if he/she has been called upon without volunteering.

4. If the child attempts a response, mark a line through the "o" or the "v".

5. If the response is correct/appropriate, mark another line through the "o" or the "v".

6. Record the time the lesson formally ends.

Remarks.

1. Although we are primarily interested in the responses and response opportunities of the target children, record the responses and opportunities of all children in the group. (If it makes the task easier for you, write the names of all the children above their respective circles on the observation sheet.)

2. A child should be considered as "volunteering" if his/her hand is raised Record the responses of only those children on whom the teacher calls to respond, however.

3. Any attempt to respond, once called upon, should be credited with a line through the "o" or the "v".

4. If you are not certain whether a response is correct or appropriate, and the teacher does nothing to indicate its correctness or appropriateness to the child, assume that it is correct.

5. Please use a separate observation sheet for each small-group activity that you observe.

FORM F

OBSERVATION SHEET

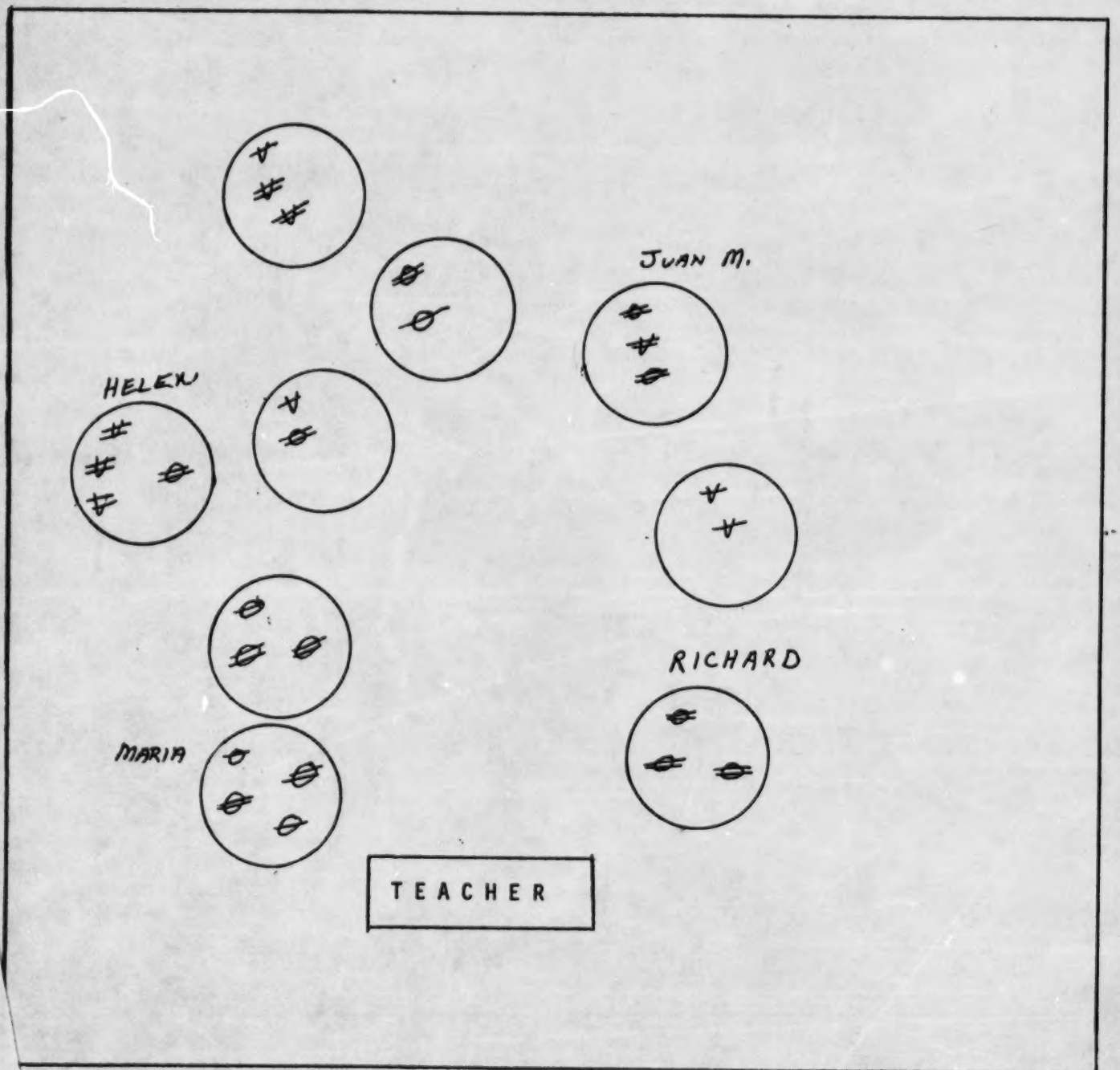
Observer's initials: KBF

School FLORY

Time lesson began: 1:10

Time lesson ended: 1:30

Total minutes: 20



OBSERVATION SHEET

Observer's initials:_____

School:_____

Time lesson began:_____

Time lesson ended:_____

Total minutes: _____